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1992

Forest Service, USDA

RECORD OF DECISION

Littlerock Dam and Reservoir Restoration Project

Valyermo Ranger District, Angeles National Forest
Los Angeles County, California

Decision and Reasons for the Decision

Littlerock Dam and Reservoir is located on Littlerock Creek about 10 miles southeast of the City of Palmdale and 4 miles south of the community of Littlerock. The dam and reservoir are jointly owned by Littlerock Creek Irrigation District and Palmdale Water District.

The existing dam is a multiple-arch concrete structure, designed by John S. Eastwood between 1918 and 1922. Construction was completed in 1924. The dam has a maximum height above bedrock of 170 feet and a crest length of 720 feet. It is included in the Historic American Engineering Record and listed on the National Register of Historic Places.

Throughout the life of Littlerock Dam there has been controversy and concern over the adequacy of its design and its overall stability and safety. A number of engineering studies have been conducted in an attempt to address this concern. According to the State of California, Department of Water Resources, Division of Safety of Dams, Littlerock Dam in its present condition is unsafe and must be altered to meet mandated and accepted dam safety requirements, or it must be breached so that it cannot store water.

Littlerock Dam provides a number of benefits to the community. Although constructed as a water supply facility, the dam also provides debris control, limited flood protection, recreational opportunities, fish and wildlife habitat enhancement, and provides an economic stimulus to the area. For these reasons it is in the public interest to maintain the reservoir.

The Proposed Action consists of strengthening the dam, raising the height of the dam, constructing recreational facilities, and relocating and improving a segment of Chesboro (Littlerock Canyon) Road. Sediment will be removed from the reservoir annually. The Proposed Action as well as all the Alternatives offer additional protection to the public and the environment from flooding as a result of dam failure due to earthquake or major storm events. The Proposed Action provides additional water for beneficial uses in addition to providing for the public safety. No practical repairs which would preserve the historical and aesthetic integrity of the dam were identified.

Therefore, it is my decision to select the alternative described as the Proposed Action in the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and to issue a Special Use Permit to Littlerock Creek Irrigation District and Palmdale Water District authorizing the restoration. My decision includes all of the Mitigation Measures identified in Table 4-2 of the final EIS/EIR except for SE-1. My exclusion of SE-1 does not affect the adoption of that measure by Littlerock Creek Irrigation District and Palmdale Water District. I am requiring two additional mitigation measures. Measure

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R-5 requires that "Riparian enhancement required in Measure ER-12 will provide for access from the Santiago Staging Area to the reservoir bed for the purposes identified in Measure R-2." Measure R-6 requires "Access from the Santiago Staging Area to Alimony Ridge OHV Route will be maintained during sediment removal activities." Exhibit A of this document delineates the exterior boundaries of the areas where the riparian mitigation required in Measure ER-12 will occur. These additional mitigations provide clarification in response to public comment received after release of the Final EIR.

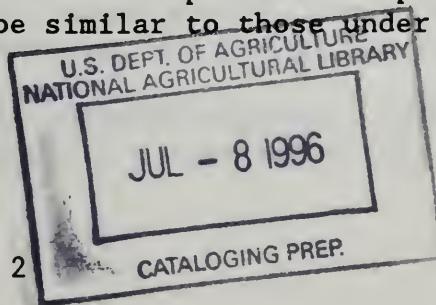
Implementation of the proposed action will result in significant impacts to the human environment in four areas. Daily ambient air quality thresholds for PM10, HC, NOx, and SOx will be exceeded during construction. The dam will be removed from the Historic American Engineering Record and the National Register of Historic Places. The dam will be strengthened and the risk of dam failure reduced. Construction and aggregate removal activities will cause visual impact. The enlarged size of the dam and the introduction of a new surface material will modify form, line, texture, and color of the existing condition.

Implementation of Alternative 1 would have similar impacts to those of the proposed action. However, the visual disturbance caused by the aggregate extraction for the upstream borrow area would cause short-term significant visual impact. Compared to the proposed action, less than 25 percent of the truck trips associated with obtaining aggregate would be needed; therefore impacts to Chesboro Road would be slightly less.

Implementation of Alternatives 2, 3, or 4 would have similar impacts to those of the proposed action except: Daily ambient air quality thresholds for PM10, HC, NOx, SOx, and CO would be exceeded; approximately 8.4 acres of riparian habitat would be inundated by the new reservoir level; visual disturbance associated with initial sediment removal to the Angeles National Forest disposal site would cause significant short-term impacts; gridlock or unacceptable traffic congestion would occur at the intersection of Chesboro Road and Route 138 during the initial and annual sediment removal, and the importation of aggregate and cement. Accident rate could increase by 85 percent. Chesboro Road would fail in first weeks of sediment removal. Avenue T would sustain significant impacts to the road life within the first 10 years.

Implementation of Alternative 5 would have impacts similar to those of Alternatives 2, 3, and 4 except the water level of the reservoir would be lowered and approximately 10 acres of riparian habitat would dry up. Accident rate could increase by about 127 percent during construction.

In addition to loss of the water supply, implementation of Alternative 6 would result in significant impact in several other areas. Daily ambient air quality thresholds for CO and NOx would be exceeded during removal. There would be a loss of debris control benefits. The riparian habitat surrounding Littlerock Reservoir would dry up. The dam would be removed from the Historic American Engineering Record and the National Register of Historic Places. Water-oriented recreation would be lost. Transportation impacts associated with sediment and dam removal would be similar to those under Alternative 2.





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Public Involvement

A Notice of Intent to prepare an EIS was published in the Federal Register on February 28, 1990, and a Notice of Preparation of an EIR was submitted to the State Clearinghouse on March 8, 1990. A public meeting was held in Littlerock, California on March 27, 1990 and a second public meeting was held in Palmdale, California on April 4, 1990. Transcripts of the public meetings and the thirteen letters received during the public scoping period were used to develop the following Issues.

Present dam is considered unsafe from a seismic hazards standpoint by Division of Safety of Dams (DSOD). Repair of the dam must be acceptable to DSOD.

Dam is listed on the National Register of Historic Places and is therefore a significant cultural resource.

Other historic and/or prehistoric archaeological resources which could be affected by the proposed project may be present in the project area.

Riparian habitat is located both upstream and downstream of Littlerock Dam. It is a Department of Fish and Game policy that there should be no net loss of wetland acreage or habitat values.

Effects to threatened or endangered species which may be in the project area must be identified.

Identify impacts to wildlife and wildlife habitat in the project area.

Littlerock Creek is adjacent to the existing dam and proposed construction area. Identify potential adverse impacts due to the proposed project from any increased runoff, sedimentation, soil erosion, and/or other pollutants on streams and watercourses on or near the project site.

The project area is one of two areas within the Angeles National Forest designated for off-highway vehicle use. Identify impacts from the proposed project on the existing off-highway vehicle use in the area.

Diverse recreation activities occur within the project area. Identify any change in recreation use in the project area. Identify effects to water-related recreation use. Identify effects to Littlerock Lake Resort. Identify effects from overall increase in recreation use.

The project area is within the Angeles National Forest and is managed under the goals and objectives outlined in the Land and Resources Management Plan. How does the proposed project conform with existing recreation and land use plans for the project area.

Littlerock Dam is characterized by unique architectural design. Discuss the project related effects to the aesthetic quality of Littlerock Dam.

Traffic within the project area is already congested. Discuss effects of construction related traffic on traffic congestion in the project area.

There is concern over the accident rates in the project area. Discuss the potential increase in accidents due to construction traffic.

Some roads in the project area may not be able to stand up to the stress of heavy traffic. Discuss effects of road deterioration in the project area due to construction-related traffic.

The Draft Environmental Impact Statement Environmental Impact Report (DEIS/EIR) was filed with the Environmental Protection Agency and a notice appeared in the Federal Register, Vol. 56, No. 129, July 5, 1991. It was also filed with the California State Clearinghouse on June 28, 1991. Approximately 90 copies of the DEIS/EIR were distributed to various individuals, organizations, and government agencies. The public comment period ended on August 30, 1991.

During the public comment period, 33 comment letters were received. Most of comments concerned recreation opportunities in the area; public safety, historical value, and riparian habitat were also of concern. The letters, the agencies' responses, and mitigation measures developed are presented in the FEIS/EIR.

Alternatives Considered

The feasible alternatives for this project include those that would provide adequate protection to life and property downstream of the structure.

Proposed Action (Selected Alternative) - The primary element of the restoration of Littlerock Dam and Reservoir is a roller-compacted concrete (RCC) buttress, constructed between and downstream of the existing multiple-arch buttresses. The new structure would serve to strengthen the existing dam, and would be constructed as an auxiliary overflow spillway section designed to pass the probable maximum flood in conjunction with the spillway. The crest of the existing dam and spillway would be raised to allow increased reservoir storage, and the spillway area protected from scour and erosion. Approximately 2,500 feet of Chesboro (Littlerock Canyon) Road will be relocated. This and other restoration activities will necessitate closing the road between Littlerock Entrance Station and Santiago Staging Area to public use during the reconstruction period anticipated to take one construction season. Approximately 54,000 cubic yards of sediment will be removed from the reservoir annually. This will necessitate closing Littlerock Canyon Road to public use for about one month each year while sediment is removed.

Alternative 1 - Full Restoration of the Dam with Roller Compacted Concrete Using Aggregate From Upstream of the Dam. This alternative is similar to the proposed action. However, the aggregate for the RCC would be obtained from a borrow excavation located upstream from the dam, in an area beneath the existing reservoir elevation.

Alternative 2 - Full Restoration of the Dam with Roller Compacted Concrete Section in the Downstream Portion of the Dam. This alternative involves filling in the archbays on the downstream side of the dam, as does the proposed action, but would not raise the height of the dam. Spillway modification and abutment protection would be required. In order to restore the lost storage capacity of the reservoir due to siltation, the reservoir would be desilted with this alternative. Approximately 2.8 million cubic yards of material would

have to be removed in order to restore the reservoir capacity to that equivalent to the proposed action. Some of this material would be used as aggregate for the RCC and the remainder of the material would be disposed of elsewhere. Removal of material would occur over two construction seasons. Potential alternative disposal sites for the removed sediment would be off-site for commercial use or an area in the Angeles National Forest, approximately 7.5 miles west of the reservoir. The disposal site would cover an area of approximately 57 acres, to an average thickness of 30 feet. The roads between the reservoir and the disposal site would need to be rehabilitated and maintained. The annual sediment control program would be the same as for the proposed action.

Alternative 3 - Full Restoration of the Dam by Filling the Archbays Between the Buttresses with Mass Concrete. This alternative involves filling in the archbays on the downstream side of the dam with mass concrete without raising the height of the dam. This alternative is essentially the same as Alternative 2 except for the type of construction materials and construction methods, however the footprint of the dam would not be increased.

Alternative 4 - Full Restoration of the Dam by Partial Filling, Strengthening the Buttresses, and Increasing the Spillway Capacity. This alternative involves filling the lower portion of the bays with mass concrete, stiffening the buttresses with pre-cast concrete beams, protecting the abutments from erosion, and increasing the spillway capacity. In order to restore the lost storage capacity of the reservoir due to siltation, the reservoir would have to be desilted with this alternative. Some of this material would be used as aggregate for the mass concrete and the remainder of the material would be disposed of elsewhere. The disposal sites would be the same as those for Alternative 2. The annual sediment control program would be the same as for the proposed action.

Alternative 5 - Partial Restoration of the Dam. This alternative involves lowering the spillway, strengthening the bays with shotcrete, reinforcing the struts, and constructing a sloping concrete slab between the buttresses. All aggregate used for this alternative would be from commercial sources, and no aggregate would be crushed on-site. In order to restore the lost storage capacity of the reservoir, the reservoir would be desilted. Removal of the 4.6 million cubic yards of silt would require three construction seasons. The disposal sites would be the same as those described under Alternative 2 but the silt would average 50 feet deep. The annual sediment control program would be the same as for the proposed action.

Alternative 6 - No Action. The no action alternative not only means that the applicant would not restore the dam and reservoir but also that the dam would be removed. If the applicant does not conduct the necessary repairs to make the dam safe, the Division of Safety of Dams would require that it be breached so that it cannot store water. Once the dam was breached and no longer served its intended purpose, the special use permit which authorizes its occupancy of National Forest System lands provides that it will be removed. Demolition of the dam would require a staging area downstream of the dam of 1 acre in size and require two construction seasons.

Constructing a new dam at alternate locations and alternatives for repair of the dam which minimized impacts on its historical and aesthetic value were considered but were found to be infeasible.

Sites within Littlerock Canyon were also considered for disposal of sediment but found to have obvious significant environmental impacts.

Findings Required by Other Laws

Issuance of the Special use permit for the restoration of Littlerock Dam is in compliance with the Angeles National Forest Land and Resources Plan, 1987.

A Memorandum of Agreement to satisfy the requirements of the National Historic Preservation Act of 1966 is being executed between the Regional Forester, USDA, Forest Service and the California State Historic Preservation Officer.

Environmentally Preferable Alternative

The environmentally preferable alternative is that which most closely fulfills the Congressional declaration of national environmental policy found in Section 101 of the National Environmental Policy Act. I find that the Proposed Action and all of the Alternatives fulfill the first two criteria, protecting the future environment and providing for public safety. Neither the Proposed Action nor any of the Alternatives protect the historical and architectural integrity of the existing dam (criteria 4) or enhance renewable resources (criteria 6). The Proposed Action provides beneficial uses without environmental degradation (criteria 3) and a high standard of living which shares life's amenities (criteria 5). Therefore, I find the Proposed Action to be the Environmentally Preferable Alternative.

Implementation Date

This decision will be implemented forty five days after a notice of availability of this decision is first published in the Los Angeles Times.

Administrative Review Opportunities

This decision is subject to administrative review. Requests for review must be filed with the Regional Forester within forty five days and comply with 36 CFR 217. Alternately, Littlerock Creek Irrigation District and Palmdale Water District may appeal pursuant to 36 CFR 251.

Information Contact

For further information regarding this project, please contact Gloria Silva, District Ranger, Valyermo Ranger District, 29835 Valyermo Road, Post Office Box 15, Valyermo, California 93563, (805) 944-2187

Annie J. Meston
for MICHAEL J. ROGERS
Forest Supervisor

December 16, 1992

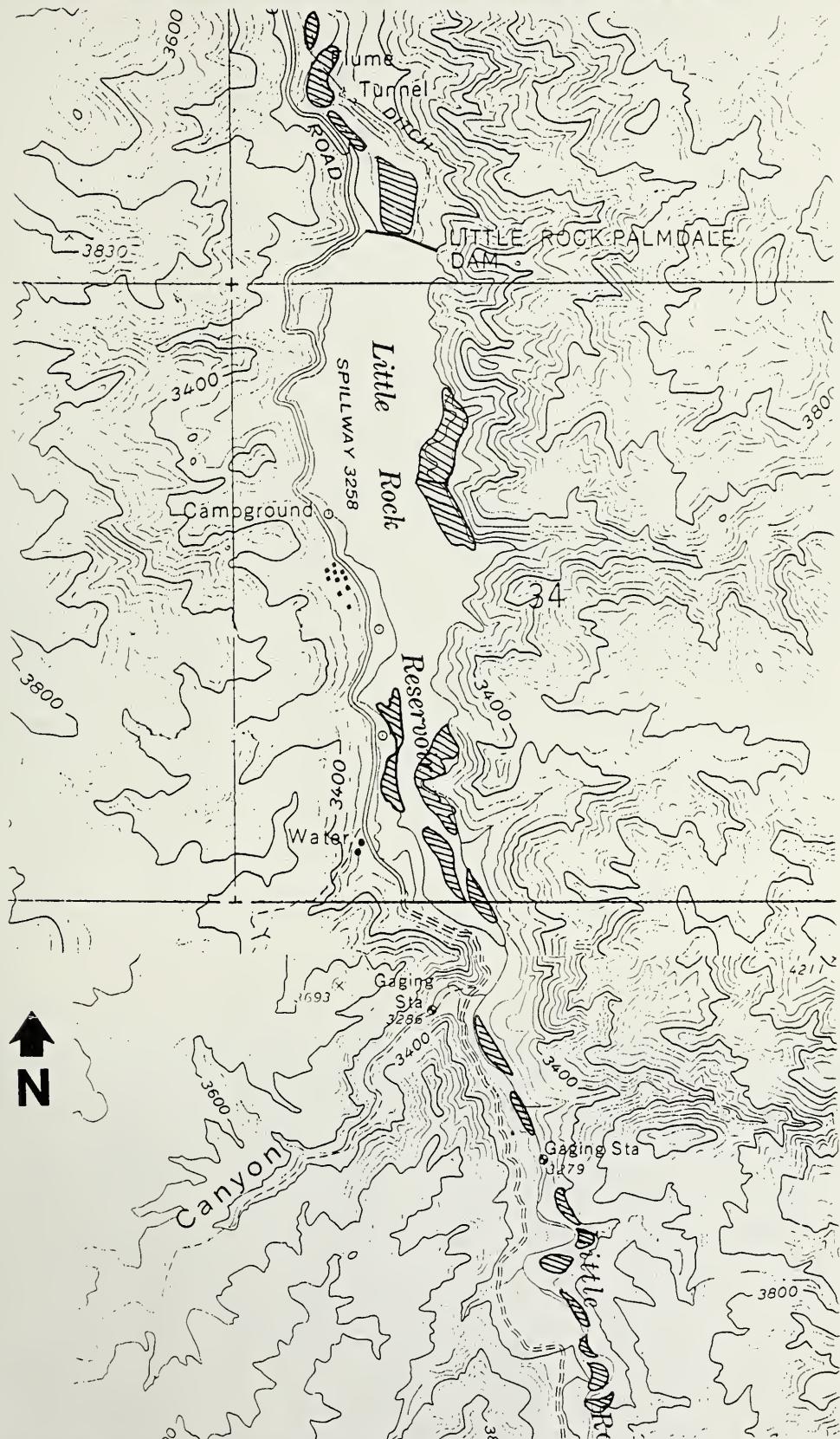
Date

EXHIBIT A
Forest Service, USDA
RECORD OF DECISION

Littlerock Dam and Reservoir Restoration Project

**Valyermo Ranger District, Angeles National Forest
Los Angeles County, California**

Areas Where Riparian Mitigation Specified in Mitigation Measure ER-12 Will Take Place



Note that areas shown exceed the acreage required under ER-12. Exact areas will be defined prior to implementation.

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